

AVIATION

The Oldest American Aeronautical Magazine

OCTOBER 24, 1927

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Eighteen French military planes taking off from Le Bourget Field, France

VOLUME
XXIII

Special Features

NUMBER
17

The Ryan-Siemens Engine
Wright Field is Dedicated
Journeying With the Boeing Air Mail

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First, Lt. Eugene Bates, USA, in Curtiss Hawk

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Second, Lt. A. J. Lyon, USA, in Curtiss Hawk

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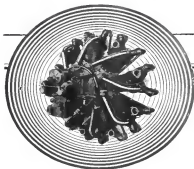
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The exhaustive research program of The Glenn L. Martin Company, launched in the mid-summer of 1926, carried forward without pause or interruption since that time and still in aggressive progress, is aimed at these four accomplishments. No detail of design, of construction or of material is being accepted on past precedent—each problem is being attacked and solved afresh.

Achievements already to the credit of Glenn L. Martin engineers emphatically confirm the soundness of the program.

THE GLENN L. MARTIN COMPANY
Builders of Quality Aircraft Since 1909
CLEVELAND, OHIO

Putting the brakes on depreciation



Why depreciation should be charged against the capital investment in an airplane? That depends on the airplane. One well-known operator "writes off" his investment in three years. As it would seem unreasonable to expect wood, fabric and glue to be dependable longer than three years, this would appear a reliable figure for that type of airplane.

But you can't apply any such figure to the Ford as motorized transport for the reason there is no wood, no fabric and no glue in its structure. It is built entirely of metal—the metal is not rusting and it properly cared for resists corrosion even in salt air. Ford all-metal monoplanes were first placed in scheduled service a little more than two and a half years ago. They've flown practically every day since. Yet the first planes have a service record to be placed, are in the same service today, and look like new planes coming out of the factory. They're even faster than new planes—for nothing and a wage has given the metal a high polish. It would be difficult, perhaps impossible, to deprive an amount of depreciation through use and wear. These planes are as airworthy as the day they first took off.

Another source of depreciation to be considered is the possibility of total loss through fire or other accident. The fire hazard does not exist in the Ford plane. The metal won't burn. And the gasoline tanks are placed in the wings, away from

engines, passengers and crew. It's almost impossible to start a fire, and nothing to have if it could be started.

"Clever accident" of course means a crash. Given a competent pilot there are only three causes of plane crashes—engine failure, plane failure, and weather. Powered by three Wright Whirlwind engines, total engine failure is unknown to the Ford monoplane. The use of metal throughout gives every part of the ship a known strength with a safety factor a fact precludes the possibility of failure of wings, landing gear or tail. Excess power provides for emergency flying conditions. Broken shock absorbers of most advanced design, wide wheel track and agile, all-metal construction, provide for emergency ground conditions. The only weather conditions which can endanger the Ford monoplane are icing and cyclones—conditions the competent pilot avoids.

A three-year rule cannot be applied to the Ford as motorized transport. Depreciation cannot be discussed until a Ford monoplane wears out. In the intervening years, capital can feel assured it cannot find a loss or rate, nor an investment promising greater safety of principle, in aircraft.

THE SHOOT METAL AIRPLANE CO.
Division of Ford Motor Company
Dearborn, Michigan



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With the Editor

On page 988 of this issue of AVIATION it is to be found an announcement of the formation of the Ryan Aeronautical Corp., of San Diego, Calif. This organization is to be headed by T. Claude Ryan, founder of Ryan Airplane, Inc., and its business will be that of manufacturing and distributing in the United States, under the trade name of Ryan-Stinson, the famous Stinson-Hallie engine now manufactured at Berlin, Germany.

The article which quotes Mr. Ryan's views also gives a description of the engine which is made in three models—five, seven and nine cylinders. Incidentally a Stinson-Hallie engine is now being used by Miss Tina Rausche in her "Flamingo" biplane. A description of Miss Rausche's plane will appear in an early issue of AVIATION.



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More Pilots fly them!*

THE remarkable performance of the Fairchild Monoplane, either as a landplane or seaplane, is the result of sound aeronautical engineering, excellent construction, and the Wright "Whirlwind" Engine.

Embodying the modern features of insulated, heated and ventilated cabins, these luxurious planes combine complete comfort for

the passenger and pilot with all the "dash", speed, climb and safety that aeronautical skill has yet evolved.

The record of Wright "Whirlwind" Engine durability, reliability and safety in private flying is just as outstanding as those made in several recent overseas flights, and in over 4,635,000 miles of military and commercial flying during 1926.

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WRIGHT AERONAUTICAL CORPORATION, TAYLOR, N. J., U. S. A.

WRIGHT
Whirlwind
A SUPERLATIVE AERONAUTICAL
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Vol. XXIII

OCTOBER 24, 1927

No. 17



What Did It Prove?

WITH THE receipt of the news of the mid-ocean rescue of Miss Ruth Elder and George Haddock by a Dutch tanker, another mark is chalked up on the successful side of trans-Atlantic flying and the age-old question comes to the minds of aviators and laymen alike—what did it prove?

To begin with, it did not prove the Stinson-Detroit composite or the Wright Whirlwind engine incapable of traversing the Atlantic stretch, for this plane has successfully flown since before and the engine four times. Newspaper reports state that the American Girl was forced to the water by engine trouble. The exact nature of the cause will probably never be known and judgment must be based on the post record of the Wright Whirlwind engine.

However, it would seem that the one great thing that this last trans-Atlantic attempt proved was the great and concentrated effort in the development of dependable radio communication between trans-oceanic coast and ships or land stations.

It is reported that the American Girl carried a 14-kw. sending set capable of sending 50 to 75 mi. Yet, for 100 mi. for the world's record and beyond for word of the plane's progress. But none came, and when word did finally arrive it was via a vessel on the water and not the plane.

What happened to the American Girl's radio, as well as to the radios of other planes whose later are mysterious history, is a question that warrants extensive investigation as far as it is humanly possible to do so. Out of it all, may come new ideas and improvements which will eventually reduce the factor of danger attached to trans-oceanic flying by enabling the aviators of the plane to keep the civilized world informed of their position at all times.

The Scapgoat

WHENEVER there is an accident or trouble of any kind it is almost a universal tendency to off the blame on to some one else. Since the start of Commerce started bending planes and there has been a very decided tendency to shift the blame to the department. The first plane and pilot were blamed for the accident. But they could have been no responsible for either the cause of the plane or of the pilot. It is utterly unfair and may lead to very serious

consequences. The department of Commerce has been assigned the task of deciding whether planes were

originally structurally sound and air worthy and also of conducting periodic inspections to see whether the planes are in need of extensive repair work so as to continue being fit to fly. The detailed, minute, daily inspection, which is so essential to safety, must be left to the operator of the plane himself. It is not at present, and it is hoped that it never will be, the function of government inspectors. Aircraft operators should not get into the habit of using the government inspection as a guarantee that a plane is in good condition. The question of pilots is really still up to the operator of aircraft. There are days when even the best there are not feeling well enough to fly and such matters can not be regulated by the Department but must be left to the discretion of the operating crewman.

If the policy of making the Department of Commerce the scapegoat for all accidents occurring there is hoped to be a most unfortunate political reaction. As a matter of self protection the department will be constrained to enforce its regulations to the letter of the law and there will follow a series of drastic rulings which will perhaps increase the safety of flying but which will also greatly hamper the free operation of aircraft.

Indirect Direct Advertising

A SPLENDID EXAMPLE of educational advertising as applied to the aeronautical industry is to be found in the campaign now being conducted by the Ford Motor Co. in several of the leading periodicals. The entire campaign is devoted to the task of making the American public "air-minded" and final results is made of the fact that no attempt is being made to make direct sales of Ford airplanes, nor does the name Ford appear in the copy. However, the copy of the first ad tells of the number of miles flown over the Ford air routes, the freight, passengers and total freight hours. And it is illustrated by a picture of a farm yard scene, apparently dominated by the familiar shadow of a Ford bi-engine transport passing over head.

The Ford Company is to be congratulated on what might appear to some as philanthropic efforts, but at the same time, other manufacturers should not feel that they cannot afford to do likewise. For, the Ford campaign is placing the name Ford before present and prospective aviators and air travelers, and in the final analysis, advertising, regardless of its type, is nothing more or less than an effort to create a desire in a person or person to purchase something or some thing which you have to sell.

The Ford campaign is a splendid achievement. It is educational and also indirect direct advertising, which, in time to come, will be styled under the heading of dealer advertising.

Journeying With the Boeing Air Mail

By GEORGE J. MEAD

Vice President of Chief Engineers
Fleet of Whitney Aircraft Co.



Defending mail from a Boeing mail plane (see story)

"PLANE COMING!" Thus came the cry as I sat in the superintendent's office at Omaha on one of those hot mornings in July. The plane came right up to the hangar door where its hooker stopped it as readily as a motor car. Quickly then the night crew headed by "Doc" transferred the mail to the receiving plane. Three trips of the hook truck were necessary to carry the 500 lb. of mail. While it was recently shaved away Frank Caldwell, the superintendent of the Eastern Division, was introducing me to Jack Knight, the pilot of the westbound plane. After he climbed in and run up his engine, I entered the passenger compartment and we started. Taking off in the middle of the night with the aid of the flood light seemed simple, but the moment we were in the air we plunged into darkness as fast. On the ground it seemed surprisingly cool after a day when the mercury played around 100 deg.

Once in the air, instead of enjoying a cool ride through the night air, it was necessary to close the windows to prevent the scorching heat from penetrating the cabin. At first everything seemed okay, but gradually it was possible to make out objects on the ground. To take advantage of a tail wind, we flew at a very low altitude. Relatively few lights were visible on the ground except as we passed over an occasional town. A few landing beams could be seen along the way as well as emergency landing fields faintly outlined by beamer lights. We soon came to the North Platte River which was reflected across its low all the way to North Platte, Neb. This point was reached in about 2 hr. 45 min. I had been no interested in watching the country beneath as that it had seemed as though there must be something wrong when Jack Knight throttled down and

started to turn the plane. Almost immediately, however, the boundary lights of the field were visible, and then the big flood light came on, illuminating the field and landing as well as the river. At noon the plane came to rest in night crew seemed to be working and oil, and back of it to head for North Platte. After a 33 min. stop during which we refueled with Mr. Knight, in charge, we were on our way again, headed for Cheyenne, Wyo.

The moon came up during this part of the journey, and then some more detailed idea of the country could be gathered. It seemed as though we were flying over a large checkerboard. Each little square represented a 166-acre field, which was not quarter of a greenacre) surface of 400 acres. The fences of these fields ran absolutely east and west, and north and south, which is of great assistance to the pilot. As we approached Cheyenne some of the Red Mountains could be seen to the south, in the distance of Denver, Col. At the same time the nearly laid on fire gave way to prairie, on which were seen herds of cattle and occasional ranches. I was truthfully say that I had had such a smooth ride in the air as Jack Knight gave me from Omaha to Cheyenne. After after hour it passed on without a bump, and when it became light in sight in me, without the wings ever changing their position, with the business Cheyenne, with an altitude of 4900 ft., was reached about five o'clock. This city is approximately 500 miles from Omaha. Due to its altitude the early morning air is quite freely. The mail was transferred here to another plane

which was waiting with the engine idling, while Jack shared with me the sandwiches and coffee which he had brought from home.

Pilot Knight was scheduled for the trip to Salt Lake City, and took off in about 10 min. The country changed quickly from prairie to hills and then mountains, as we left Cheyenne. Perhaps half an hour after we passed over Sherman Hill, a city has the highest average elevation in the world, its elevation being 9000 ft. During those of the winter months the layer is out of communication with the world. After leaving the hangar behind us, which is the best reason for those who fly, we then alternately over prairie and mountains. Towns were seldom seen, only an occasional ranch. The part of the journey is far from monotonous, as the country is changing rapidly in every direction. Occasionally the Union Pacific Railroad was in sight, and, as the day went on, automobiles could be seen on the Lincoln Highway. Both means of transportation certainly seemed slow to us as we go on traveling, so we were, more than twice as fast.

Land at Rock Springs, Wyo.

We finally climbed another ridge, and glided down to Rock Springs, Wyo., which has a field at 5400 ft. From the same I reported to see a very delightful place. As a matter of fact, the field consists of a portion of the prairie covered with sagebrush and sand, with oak here and there. The town of Rock Springs was nowhere to be seen. As I learned later, it was to the north of us, perhaps eight or ten miles away. The plane was refueled at this point as a safety measure, and it sometimes takes three hours to cover this part of the journey.

Across the field to the westward ran a winding cliff, the summit of which is perhaps 2500 ft. above the field. It was on these cliffs in the winter that a mail plane had been within a few feet of the top as a safety measure. In the spring houses were able to draw the plane to the plateau of the top of the cliff, from which it was flown

away. On account of the altitude the planes land very fast, but due to the good hooks with which they are equipped, are able to stop in a remarkably short distance. As we turned down the field to take off, I wondered how quickly the "Wasp" could lift the eight or nine hundred pounds of mail, together with the plane and its occupants. Barker turned the plane around and headed directly for the hangar, and up we went without any apparent effort. These take-truck landing fields demonstrate the remarkable qualities of the Boeing who landing gear with which the mail planes are equipped. On a prairie the thin rock change of sagebrush collects a mound of sand around it, making a shell of considerable bumps, with the result that it takes a really remarkable time to stand the landing and taking off of such a big plane.

No Trouble With Landing Gear

To date I have never heard of any trouble being experienced with these gears, and from personal experience know they absorb tremendous bumps and prevent the plane from bouncing. From Rock Springs to Salt Lake City the country is almost continuously mountainous, particularly if a compass course is followed. From subsequent flights I noticed that there are stretches of more or less flat country in the shape of valleys and canyons between the hills, if a more or less mountainous course is followed. The coloring on this part of the trip is most remarkable, especially under the light of the morning. After we had been out about an hour, and had been more or less steadily rising, we came to the summit of the Wasatch Range. This range reaches an elevation of ten or eleven thousand feet. It certainly is a sight to be remembered when the plane starts downward after crossing the ridge, and you see below a tremendous plain with mountains in the background, at the foot of which is Salt Lake, and directly below the City of Salt Lake, with its green trees and houses strongly contrasted against the brown of the desert. I suppose we had a five or six thousand foot drop to the landing field, which is just the other side



A portion of the mountainous country as seen from a Boeing mail plane.

had. The fog was so thick that we had to turn back almost immediately. The westbound plane was very late so we all decided to try to get a ship. This was not very easy, and as the radio operator seemed to be busy, I preferred to stay up and talk to him. We had several false starts during the night, and finally agreed we were all hungry and tired, so down town and got something to eat. Upon our return, Collins started calling up the railroad, and I wondered if he was taking a representation on a transcontinental train. Imagine my surprise when he asked the dispatcher what the weather was over the "line". In a moment or two the dispatcher had called up all the railroad stations along the line for a hundred miles and reported the weather.

Try to Get Through Fog

I learned, on an interesting midnight, that during a transcontinental storm a few years back, which crippled the telephone service on the railroad, that the air mail dispatched the trains for them by means of radio. "Jim" Lewis came in from Omaha while we were down having our breakfast, and reported that the weather was fine at Cheyenne, compared with any place else he had been. About eight o'clock A.M. we decided we could get under way, so we took off and flew in various directions trying to get through the fog back about 40 mi. Finally we made a landing on the prairie, and waited for conditions to improve. We finally got off and after various attempts Alford finally dashed along the tracks and we went on our way. For perhaps 100 mi we did not see the ground. Nothing but a blanket of white clouds and fog. Overboard the sun shone brightly, although the people in the ground were completely not aware of it. As we approached North Platte the clouds and fog began to disintegrate, so that we had occasional glimpses of the earth, which seemed very green, contrasted with the white of the clouds. Finally, we ran out of fog entirely, exactly on our course, and Alford flew along over the river trying to make the best time he could. After a brief stop at North Platte we continued on our way to Omaha, which we reached about half past two.

On to Venice



In order to be present at the recent visit by the submarine Trieste to Venice in one of the new British H.E. F. airships planned for flight to Italy, the British Airship Line has announced that it will send a ship to Venice in one of its new H.E. F. airships. The return journey was announced on Oct. 21, but had been considered since a few days ago. The ship is now under construction.

in the afternoon, instead of one which that morning. It seemed like something to see to see Frank Coleman, who was in the afternoon, with Hobbs of St. Louis, and Bill Wheatley, "Hokey", and the rest of the gang.

This sort of ferry-ferry flying and mail planes, all equipped with "Hokey" engines, have arrived approximately 10 times as in the past three months. During the first two years operations in July, several delays or stops due to engine difficulty were recorded. This difficulty came from overloading, largely due to engine installation troubles, all of which were soon remedied. Since the early period there have been no mechanical failures of the engines, although some of the lines have now passed 200 hr. Attention is called to the distinct change of August operations. In the words of one crew chief, Thomas, who is working Boeing in the field, "the old 'Hokey' is doing her best."

Under the Post Office Department the engine equipment used for the transcontinental air mail was the Liberty engine which was obtainable from surplus Army and Navy war stock. The operation of Boeing Air Transport are of great interest, as they are employing not only new mail planes of their own design and manufacture, but modern air-cooled radial engines, as well. The combination of veteran personnel and the modern equipment is bound to establish a new record of air transportation. The 400 hp air-cooled Wright with its weight of about 650 lb. over the 600 hp water-cooled Liberty, provides for the smallest of additional mail. It is gratifying to know that the air mail provides in standard equipment. There is reason to believe that without a subsidy the Boeing Air Transport Co. will prove the business soundness of American air transportation.

P.A.T. Planes Carried 300,000

Air Mail Letters in September

NEARLY 300,000 letters and parcels were sent by air mail between all coast cities in September, according to the monthly traffic report of A. K. Thompson, vice-president, Pacific Air Transport, made public recently. The total weight was 7300 lb., a gain over the preceding month of 500 lb., or eight per cent, plus.

Improved facilities for overcoming transoceanic weather, in that fast schedules are kept despite fog, rain and cloud, helped to account for the increasing percentage of the air mail service between coast cities. Extra planes are stationed at strategic points in southern California and the air mail is carried in these planes when the airport is fogged in.

To combat adverse weather in the Pacific Northwest, the report states, a specially-built motorcycle with side car, manned by a former race-driver, is held in readiness to speed the mail and connect with the mailplane planes beyond the bad weather area.

Plan British Airship Line

ACCORDING to the report of the Australian Consul at Melbourne, Australia negotiations are now in progress for the establishment of an airship service between England and Australia. The report states that a British Air Mission is now in Australia to advise the Australian Government with a view to inaugurating an airship service between England and the Commonwealth. Two possible routes for the proposed service have been mentioned. One is via India and thence turning south to reach the Malay Archipelago and Java, and the other via North Africa. Each of the routes is which it is planned to use will have a 5,000,000 sq. ft. capacity, a length of 770 ft. and width of 120 ft. They will carry 300 passengers, a crew of 10 and 30 tons of freight in all. It is thought that they will be able to complete the trip from England to Melbourne in 30 days.



Aerial view of the buildings at Wright Field, Dayton, O.

Wright Field is Dedicated

Many Leading Army, Navy and Civilian Air Officials

Attend the Ceremonies at Dayton, O.

THE DEDICATION of Wright Field, Dayton, O., which took place on Oct. 12 marked an important step in the program of American aviation. From now on the most experimental and progressive work will be housed in modern and adequate quarters instead of the temporary and makeshift buildings which had been used at McCook Field. Many leading figures in both Army, Navy and civilian aviation attended the ceremonies, and many of the dignitaries of war which marked the morning program there was a large attendance of civilians from Dayton and near by towns.

The morning was spent by the visitors in inspecting the new plant and in examining the excellent display of aeronautical materials and apparatus which were housed in the new buildings. A most interesting and well grouped set of had been arranged, showing photographic apparatus, bomb racks, machine guns, parachute, etc. Large numbers of school children were shown and had various exhibits explained to them by courteous guides. One of the chief centers of attention was the "branch" which is used to test the operation of prospective planes. Many were

allowed to try out their abilities in the control of the rolling chair and the results greatly excited the onlookers.

The actual dedication ceremony took place at noon and was held under the big tent which was set up in command of the field, was the first speaker, and he brought out the significance of the change from the temporary quarters to permanent buildings in representing the Government's recognition of the importance of experimental work. Col. W. E. Davis, who was largely instrumental in raising the funds which were used in the purchase of the land delivered a speech on behalf of the residents of Dayton and neighboring towns and presented the property to the Federal Government.

Gen. Mason M. Patrick and the Rev. F. Tinsley Devotion both made short addresses and were followed by Secretary of War Dwight F. Davis, who was the principal speaker of the day. After the speeches Orville Wright came to the scene and presented the property to the Federal Government.

In the afternoon the weather cleared and everyone proceeded to the old Wilbur Wright field to see the exhibition of planes and flying. In spite of the bad weather of the

meeting a crowd estimated at over 15,000 gathered to see the aerial maneuvers staged by Lieutenant James H. Doolittle, James T. Harkness and B. C. Moffett. The John L. Mitchell Trophy Race, in which fifteen Curtiss pursuit planes and pilots from Halbridge Field participated, was the closing number on the program.

The process of moving from McCook Field has been going on for a considerable time. The move was made necessary for several reasons, the most important of which was that McCook Field being very near to the center of Dayton was



The Administration building at Wright Field.

not sufficiently large for the safe testing of experimental aircraft. In addition to this the land was not owned by the Government but leased from the General Motors Co. The buildings having been put up very hurriedly during the war were not suitable for permanent occupation and the Government began looking around for a new site. Several locations, some near Dayton, and others in different parts of the country, were considered but in 1921 a group of scientists at Dayton and accordingly were decided that the experimental division should be kept in Ohio and they purchased 4,502 acres of land for \$450,000 and presented it to the Government. The land was accepted and in 1925-26 Congress voted \$1,500,000 for new buildings and the expense of transfer. Further appropriations of \$300,000 per year for a five year period were also assigned for.

The site chosen for the experimental station is between



Aerial drawing of the buildings and airbase at Wright Field, Dayton, O.

Dayton and the old Wright Field where the Standard Air Station was built in 1925. The latter was used previously for a number of years but it is rather far out from town and in case of flood it would be inundated and therefore a new suitable for permanent buildings. The new field is about a mile square but it probably will not be in condition in an experimental flying from until next fall.

Work on the buildings and the immediate approach to the buildings was started in May, 1926. What has been done so far represents the expenditure of the original appropriation of \$1,500,000 and several appropriations are now being drawn upon but this means that it will be another five years before the plant as originally planned will be completed and this delay entirely justifies the Material Division since the very serious handicap. Personnel and material began to be installed in the new buildings in March of this year and the administrative part of the work is now being carried on from Wright Field. The dynamometer work, the wind tunnel work and the propeller testing is still being done at McCook Field, while the flight testing is being carried on at the old, Wright Wright Field.

The new buildings are really not very much larger in area than those occupied at McCook but they are much more compact and better arranged and will tend to greater efficiency. The administration building, laboratory, draft assembly and wind house are completed and in active operation while the propeller testing rig and the wind tunnel are well under way. No work has been done as yet on the hangars.

The procurement and business personnel is housed in the administration building which is 540 ft. long and 56 ft. wide. Just behind this is the laboratory building in which the definition which was located. This one floor building is illuminated by skylights and has an area of 145,000 sq. ft. The engineering and research work personnel will be located in this building. The assembly building has an area of over 35,000 sq. ft. and in back of it are three wings which contain a very complete and elaborate equipment for wood, sheet metal and machine work. Although it is not the intention to manufacture complete airplanes the final assembly plant and its machine shop annexes would certainly be ideal for such

a purpose. Almost every sort of work can now be done with the new modern machinery available. The windhouse which is a part of the railroad is 502 ft. long by 504 ft. deep; it is only very completely stocked with all sorts of material and contains over 400 tons of metal to be used in experimental work.

The completed propeller testing rig rather resembles a large windmill. When completed it will be capable of testing propellers up to 45 ft. in diameter and absorbing up



The completed propeller rig at Wright Field.

to 2500 hp. There will be a 33 ft. wind tunnel and also a few ft. tunnel. Provision can also being made for transient testing, dynamometer work, torque stands and for hangars which will house the experimental planes. When the layout at Wright field is finished it will make one of the most complete and up-to-date experimental stations in the world. As the procurement and handling of experimental material is now centered in Dayton that city is certain to remain the center of Army aircraft development.

Jugoslav Pilot Wins Air Race

AT A recent air race held in Belgrade, Jugoslavia, Dr. Polish, Czech and Jugoslav airmen only four of fourteen planes finished. The route of the race was from Belgrade-Budapest-Franco-Strasbourg-Warner and return, the winner a Jugoslav aviator, Stankovic, meeting a prize of 125,000 dollars. The second prize of 50,000 dollars was won by the Polish pilot, Surko, and the third by Major Koderich of Jugoslavia. Michael Pilschinski had offered a special prize to the winner but it was the winning airmen himself, and this therefore went to the Jugoslav Air Club. The prize consisted of a statue of the Polish King Sigismund III. Stankovic flew a plane constructed in Jugoslavia. General Hajdich, Minister of War, gave a special banquet for the winners, while the Belgrade Municipality arranged special festivities.

A Light Plane Height Record

ACCORDING to an English report Mrs. Ethel Lynn, one of England's best known women fliers, accompanied by Lady Baily as passenger, recently established what is believed to be a light plane record for altitude. It is stated that in reaching an altitude of 17,000 ft. through the type of plane was not mentioned it is believed to have been a de Havilland "Moth".

Demonstration Given of High Speed Motion Picture Camera

AN EXCEPTIONALLY high speed motion picture camera, adaptable to the photography of high speed air flow was recently demonstrated for the first time in this country at the Inland Empire School of Aeronautics at New York University. This camera is capable of taking 50,000 pictures a second and by photographing hot air passing over a body it is possible to accurately study the air flow over the body. These films taken with this high speed camera were developed by Professor S. H. Glauert of the Aeronautical Research Institute at the Tokyo Imperial University, Japan, are now being shown in this country by Dr. C. B. Smith, director of aeronautical research at that institute.

Apparatus is Very Delicate

The camera works on a very simple principle though the apparatus is very delicate and accurate. A wheel, of about two feet diameter, is accurately ground with highly polished facets on its circumference. The wheel, to be photographed is reflected by these polished surfaces as the wheel, which is revolving, is a cylinder on which the film is helically wound. By having the wheel and cylinder revolve in synchronism, with the cylinder at the same time moving along its axis, a new portion of film is constantly presented for the reflected picture. Hot air, the flow of which is detachable from the surrounding atmosphere, is passed over the object at the required speed and in that way the air flow may be photographed.

The adaptation of this camera to the study of aerodynamics very clearly and slowly demonstrates the flow of air over a body. The film demonstrates the flow of air over a wing at 15 wing and a Handley Page wing with a slot at the leading edge, the flow through a propeller and a windmill, and the flow over a wing developed by Professor Waite of the Japanese Institute. This wing is very interesting having a number of short flexible flaps on the upper surface trailing the length of the wing parallel to the leading edge. It is claimed that these flaps are down at low angles of incidence while at high angles they stand up almost perpendicular to the chord of the wing giving a very stable surface near the trailing edge. It is said this wing can operate angles normally beyond the stalling point reducing the leading speed of a plane considerably.

Tunnel is a Mile and a Half Long

The development of this camera has brought attention to the Aeronautical Research Institute at the Tokyo Imperial University. The institute is equipped with a modern aeronautical laboratory for research in aerodynamics, materials, aerology, engine, fuel, instruments, etc. Through the aid of the Japanese Government an underground tunnel was recently acquired. This tunnel is straight and a mile and a half long. As the air in the tunnel is still, by having perfectly smooth tracks, it is expected to have a very effective wind tunnel. Work is now in progress for the construction of this apparatus.

The institute is running a series of tests on the destruction of aircraft engines. These tests cover the endurance of the engine after any one of a combination of tests have failed, such as the engine system, etc. During the failure of the engine accurate data is taken on the performance of the engine.



Y. Claude Ryan is
holder of a Ryan
Siemens engine

The Ryan- Siemens Engine

**Ryan Aeronautical Corp., is Formed
to Manufacture and Distribute
German Engine in the U. S.**

airplane engines 12 years. The Siemens-Halske Company employs 100,000 persons and its engines are standard equipment on 12 German airways, being built primarily for commercial aviation to give maximum service with minimum expense. Many operators have reported 400 hr. of service without so much as adjusting the valves.

Mr. Ryan's announcement of the new company followed a survey of the American aircraft industry in which an impression of opinion concerning the type engine most suited for general utility in private operation, general commercial business, business passenger flights, aerial taxi, photography, advertising, etc. and further from transportation of business officials and flying clubs was sought and obtained.

Engines in three models will be offered. General utility will be maintained at San Diego, where complete service facilities for overhaul by expert factory and mechanics will be given. Stocks of engines and parts are now available at both San Diego and New York, and more will be available from dealers over the United States.

In announcing the Ryan-Siemens engine, Mr. Ryan explained that he had been studying the American market since he left the active membership of the Ryan Airlines last spring and has concluded that the greatest market exists for economical two or three seater planes powered with relatively small engines.

The Ryan-Siemens engines (models A, T and D) with 50,

October 24, 1937

and new cylinders respectively, will have rated outputs of 75, 100 and 125 hp. Each model has a bore of 3.15 in. is, and a stroke of 4.53/32 in. The stationary cylinders are arranged radially and consist of an open steel casting with aluminum alloy heads screwed on. They are provided with drop valves which are actuated by pushrods and roller tappets. The crankshaft runs on ball and roller bearings. Four, six and eight secondary scavenging valves, respectively, are connected to the head of the master rod acting upon the crankshaft by way of two sturdy ball bearings.

All engines are supplied with two Siemens magnetos and each cylinder with two Siemens spark plugs. The five-cylinder engine is provided with one magnetos, the seven and nine-cylinder engines with two, each magnetos serving all cylinders. The arrangement of the master rod on the crankshaft permits of varying the adjustment even while the engine is running. There is a gear pump for the oil supply, which automatically effects lubrication, and a gear return of pump, magnetos, carburetor, air- and oil-pump are fitted to the rear and cover in such a way as to be easily interchangeable and readily assembled. The engines are adapted for motor or pusher propeller drive and accurately run counter-clockwise, with the crankshaft facing the propeller. Engine setting in a clockwise direction can be supplied, according to Mr. Ryan.

Before announcing the engine, Mr. Ryan equipped a Ryan airplane at San Diego with a seven-cylinder model and tested it 33 weeks on the Pacific coast. The combined economy



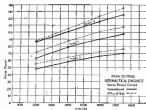
Five-cylinder view of the 5-cylinder Ryan-Siemens engine

and efficiency installed here with the product, he said. These big air-bay, fragmentary as compared with those underlined by the German Office of Design Bureau for Aircraft, however, whose reports declare the engine completely suitable for aircraft use.

In the German tests the nine-cylinder engine was run 350 hr. under full load on the test block. This included a com-

AVIATION

999



Siemens test of 50 hr. The same engine later was installed in an airplane and used in flights totaling 150 hr. over a distance of 12,250 mi. This was completed without changing any part in the engine, which already had run 150 hr. on the test block. All these tests were conducted under control and supervision of the German testing bureau.

"Particularly noteworthy" said Mr. Ryan, "is the fact that this run from beginning to end was made at full load with the engine running at 1275-1600 rpm. These 300 hr. represented a distance of more 15,000 mi., or approximately the circumference of the earth.

"It is interesting to note that these engines were tested 150 hr. at full load, whereas the test specification of most countries call for a full load test of only 10 hr. and a 10 hr. test a non-load full load. Such severe tests as these mentioned give a better reflection of quality than lesser tests.

"In reviewing the results of these tests, it is evident that the rated power of all three engines could be increased considerably. The maximum of all three models at 1700 rpm., as shown by the tests, is 75 hp. for the five-cylinder model, 100 hp. for the seven and 125 hp. for the nine.

"The official tests have shown also that the Siemens engines are the most economical of all airplane engines. The maximum consumption during the tests was less than 50 hp. per hp. The oil consumption was 210 lb. per hp. hr.

"After the last maintenance run the engine was disassembled. Regarding the inspection, the official report said that, 'all the moving parts were found to be in an entirely satisfactory condition. A wearing of the parts was hardly noticeable. The valves had to be slightly ground.' During the run none of the valves were ground."

Under the full load test the horsepower and fuel consumption at various speeds were noted as follows:

表 2-1-1		2000年1月1日以前生产的汽车	
车型	排量 (L)	功率 (kW)	油耗 (L/100km)
Ford T	1.6	45	6.5
	1.8	55	7.0
	2.0	65	7.5
	2.3	75	8.0
Ford V	1.6	45	6.5
	1.8	55	7.0
	2.0	65	7.5
	2.3	75	8.0
Ford E	1.6	45	6.5
	1.8	55	7.0
	2.0	65	7.5
	2.3	75	8.0



A Loening OL-8 Amphibian (425 hp. Wasp) being hoisted on the water.

The Loening OL-8 Amphibian

Successful U. S. Navy Experimental Model is Powered
With a 425 Hp. Pratt & Whitney "Wasp" Engine

THE FIRST Loening OL-8, a Loening Amphibian powered with a Pratt & Whitney R-1500, "Wasp" engine developing 425 hp. at 2300 r.p.m., constructed as an experimental model for the U. S. Navy recently successfully completed all of its trials for the Navy Department. It was built by the Loening Aeronautical Engineering Corp., New York City. The OL-8 is a standard three place Loening amphibian tractor engine such as the water model types now in service with the Army, Navy, Marine Corps, and Coast Guard. These planes have proven themselves excep-

tionally rugged and practical for land and water service in all sorts of climates. They are of composite construction having a wood frame hull covered with metal and wood and fabric wings with metal ribs. The plane has a fine performance with a high speed of 124 m.p.h. and a landing speed of 30 m.p.h. carrying a useful load of 1600 lb. The OL-8 weighs 4,715 lb. fully loaded.

The Loening Amphibian has quite a distinctive appearance as it is a low-wing plane with a body mounted above a hull that protrudes in front of the propeller. For this reason it was necessary, on the water model types, to have an inverted engine raising the thrust line so the propeller could clear the hull. On the OL-8 the air cooled engine is installed with the thrust line in exactly the same place. The result has been reduced considerably getting the entire plane a much more streamline appearance. The air cooled engine has amplified the resistance which reduces the weight of the craft appreciably.

The disposition of a body mounted directly on the hull results in a very roomy plane that may be adapted to most purposes. The pilot and observer or passenger sit at the top of the body, high above the hull and in a comparatively protected position. This arrangement, which is patented by Loening, gives a combination of hull and body as the flotation element of the plane is used not only for flotation purposes but for the functions of the fuselage both in strength supporting the engine, and in room for carrying of equipment, passengers, gasoline, etc.

Beneath the pilot, who sits above the lower wing is the body, in the main fuel tank of 120 gal. It is mounted in the

tail so that it can be easily replaced by removing a few men at both along the seams on one side of the hull. The pilot's seat is well forward to give good visibility for air craft carrier landings. The greatest seat is behind him in the hull on the wings, and below in the deep hull is situated the radio for the radio operator and observer. By means of windows in the side of the hull, he has excellent visibility behind the air wing—a feature which has not hitherto been possible on most interior airplanes, and which has been found of the greatest value on the Loening Amphibian.

One of the most interesting features of the Loening Amphibian is the retractable landing gear. The wheels and the structure of the landing gear fold into the hull so that only half of the wheel protrudes, thus giving ample water clearance. The landing gear of the Loening Amphibian has never witnessed a panic where against a great deal of hard service on a land plane has shown it to be entirely satisfactory, both in strength and in turning quickly, as well as in maintenance.

The wheels are pivoted on frames, raised and lowered laterally with respect to the hull, a system on which patents have been granted to Loening. A thrust member carries the landing gear load from the top of the wheel frame. The upper end of this thrust member, being opened upon a slide tube through cables or screw shafts, releases the wheel frame turned as axle at the base of the hull upwards and into the side of the hull, so that the entire mechanism is folded away with the exception of half a wheel. The principal advantage of this folding away is not in reduction of air resistance, as much as in the reduction of water resistance for take-off and on bringing the landing gear mechanism away from the possible action of being up drifted or down which would tend to jam it one way or the other. A cover plate, attached to



Landing type of emergency construction. Wire the opening in the hull for the wheel in hull area.

the axle, folds up over the opening in the hull only a few inches up from the drive in order to prevent water, or drift, wood, or other obstacles from sweeping in there. That would also tend to jam the operation of the landing gear. The landing gear itself has a new and novel action in the manner in which the thrust rod actuates a rocker arm in the other side of which are fastened the rubber shock absorbers.

At the rear of the main section of the hull is a bulky tail shield of steel backing bearing up against rollers due shock absorbers, and on the side is mounted a removable door for water and fuel. In the early stages of its development the tail shield was a difficult problem to solve on the Amphibian, but the present shield has been found remarkably strong and maneuverable and has given no difficulty.

An additional item of interest and novelty in the landing



Close up of the nose of the Loening OL-8 Amphibian showing the 425 hp. Pratt & Whitney "Wasp" engine and the folded landing gear.



Front quarter view of the Loening OL-8 Amphibian on the ground.

gear in the mounting of spring slide on the side floats—not only do these slides protect the side floats from damage in water, but they also protect the floats from injury on the land—particularly on those frequent occasions in which pilots have landed on land with Landing Amphibians and have forgotten to let down their wheels. In which case the plane rides along on its landing gear and balances over on the wing float slide without any injury whatever. The facility with which this measure, which formerly was based on



The wing assembly room at the Leaning Aeronautical Engineering Company.

an oversight, can be done, has led to the recent practice among Amphibian pilots to recommend that in cross country flying the Landing Amphibian be flown always with the wheels up. A side landing can be made in a very short time in a perfectly normal way on the foot of the hull, particularly if the field is soft and muddy. The landing then goes results in a very short run enabling the pilot to get into a confined space. All that is then necessary is to dig holes in the ground for the wheels, let the wheels out and taxi out to the aerobics.

The whole assembly of the landing gear is an exceedingly simple and standard job, and of course has been very fully developed because of the long experience of the Leaning Corporation in this work. The operating mechanism is either by electric motor and variable drive shafts, or by a simple hand crank and cable system, which is now used on the latest amphibians.

Designed and Built in 1911 and 1912

The Leaning type of composite, wood frame-metal covered and bolted float construction was first used in experimental flying boats, designed and built by Green Leaning in 1911 and 1912, and later in amphibians built by the original Wright Company in Dayton, in 1914 when Mr. Leaning was chief engineer. In this type of construction the framing is wood, fastened together by gusset plates of metal, the entire framing covered by sheet metal bolted to the wood. Experience has shown, however, that great care is to be taken to separate the aluminum sheet and the wood by a layer of fabric impregnated with bituminous or varnish glue. The use of bolts instead of rivets or wood screws in the joints of a very carefully glued and a particularly desirable in that it makes the protection of the bolt against corrosion and salt water much easier. Each individual bolt can receive numerous coatings of varnish or bituminous, if desired, such as being fastened to the hull, it is not hammered like a rivet and therefore is not likely to lose its best-treatment against corrosion. Any amount of protection can be given the bolts, which is not true of the rivets. The wood frame has enough resiliency to take up the uneven load-strains of the land operation of this airplane to pre-

vent leaks from development, which has always been a serious cause of trouble in amphibians.

The frame work of the hull consists essentially of two longitudinal members of the Warren truss type, cross connected by bulkheads, subdividing the hull into numerous watertight compartments. The spaces between these frame-work and the diagonal members are all joined by simple bolted gusset plates of sheet metal, covered with development, giving an excellent job for production.

The lower part of the hull frame work and the upper fuselage and diaphragms forming the main fuselage section are all built in one unit, the lower part, however, having a curved transverse side and the upper body section a flat top with a rounded top. The bottom of the OL-5 is specially constructed to withstand contact with the deck slipway gear in the aircraft carrier, and in addition to this, the hull of the OL-5 is specially braced internally and externally to withstand the catapult stress incident to being shot from the Navy tender catapult.

Advantageous to Amphibian Work

This type of construction therefore has been possible at advantage in amphibian work, and is now beginning to be adapted for use in other types of flying boat hulls and from by several airplane manufacturers both in this country and abroad. The composite construction gives all the advantages of all metal floats in not absorbing water, and yet, due to the construction reduces the difficulty found in all-metal floats of making a riveted nose watertight. The sealing of the joints, by use of fabric tape impregnated with a special waterproof resin, and clamped down between the metal covering and the wood frame with transverse bolts gives a remarkably watertight result, particularly in the wood when damp weather suddenly in give all the advantages of fighting fast in a wooden hull construction.

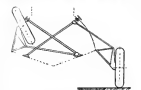
Although this composite construction has been used for years successfully in Leaning, it did not receive very wide adoption, in the airplane field because there existed a wide-



The landing gear fitted in on the Leaning Amphibian. The use of bolts in the joints is a new plan to keep landing stress from causing the gear.

spread impression that sheet and flying boat hulls led to be built like boats—rigid, as a matter of fact, the water conditions were quite different between a motor boat and a flying boat, and the dynamic requirements were altogether different. There are many criticisms in the development of new air, where survival of unpopularity to some other or delayed progress for many years. Leaning was particularly of the first airplane constructors to recognize and, with

appreciation and criticism in his first design to permanently develop an idea that an airplane was an airplane, and such not a system of its construction, including suitable flotation and control should be designed from an airplane and airplane design, and not be blindly based on adopting the construction of other air. That composite construction of sheet metal was evident from the manner in which it has been used in the construction of automobile bodies, where the welding and riveting, and vibration wear and tear is



The cross-section of the composite landing gear on the Leaning Amphibian.

far more similar to what an airplane encounters, than is the experience of the airplane's flotation element to that of the boat.

The wing construction of the Leaning Amphibian is also composite that the ribs are all made of duralumin and the spar of spruce. This gives an excellent combination for a wing, particularly with the advent of the new non-corrosive duralumin called "alclad" which is used on the ribs, because the maintenance difficulties of the small parts on a surface of glued-up wooden ribs coming apart are entirely avoided and yet the reliability and lightness of wooden spar are maintained throughout.

The wing from sections of welded steel N struts with duralumin members having the two bay wing, all bolted to a simple box girder metal fuselage which provides the wing but is carefully built in so that an oil water container is wing around the flange. The dihedral in these bays is stagger 12 in. and the span of the wing 45 ft. with a chord of six feet. It is notable that the sections are bolted with a very narrow shank. They have proven a failure in strength and light lateral control at all speeds. The lower flange are operated by lateral cables in the lower wing and the upper cables operated by cables from the lower wing so that an exceedingly simple cable system is all involved with the load was itself continuous across the plane.

Leaning 10-A Wing Section Used

The Leaning 10-A wing section is used on the OL-5 amphibian, a section, which was developed exclusively by the Leaning Corporation and given to have remarkable characteristics. In the same wing section, which, according to government tests an application to DRI planes, with no other change increased their speed over the R.A.F. 15 wing by one 1/2 mph, decreased the landing speed 11 mph, and made it fly at a speed of 2,000 ft. Several DRI's are now in the service of the U. S. Government, using the Leaning 10-A wing as one of the most valuable of these planes, being the 100th DRI used by Major E. H. Stinson, chief of the Marine Corps Aviation Section. The wing has the high self-

ty factor required of two-meter observation planes, and all manner of "steering" is provided on the Leaning Amphibian with wing structure despite the size of the craft. Special fittings that have been devised in the development of the Amphibian enable a very quick setting and take-down. One of the most notable features of the wing structure—which is applicable to many other types of airplanes—is that, the N struts are all made on elaborate jigs in one unit to an accuracy of 1/16 in. so that no bending up or adjustment of the N strut is necessary in setting up the wings. The N struts serve as an ideal jig for members and stagger.

A wheel mounted is arranged in the forward cockpit, and most control in the rear cockpit is in the usual type. The combination, however, of the wheel and stick has resulted in an interesting mechanism in which the operation of the wheel by a chain makes a sprocket, in which is attached a horizontal shaft, which when rotated at one end—due to its extreme location of position through the stick from side to side. Suitable universal joints take care of the elevator movement fore and aft, and the entire mechanism represents a very workable and simple solution of what has hitherto been quite a complicated problem in aeromarine design.

Stabilizer Not Adjustable in Flight

The elevator and stabilizer are of split wood and steel fabric airplane construction, braced by diagonal steel struts, the whole making a very rigid structure as a whole. The stabilizer is not adjustable in flight but there is what amounts to the same thing—a spring adjustment on the elevator controls that reduces the pitch of tail heavy or nose heavy balance, much the same way as the stabilizer adjustment but with the advantage that the stabilizer is still secure always a safe and rapid adjustment and likely to become dangerous due to lack of maintenance. The "stutter" system, as opposed to an adjustable stabilizer system is being needed with increased force throughout the world, and has long been a feature of Leaning airplanes. There is an added advantage in that on landing, should the plane have been flying in a tail



The tail end of the Leaning Amphibian. The control on tail is strong enough to carry the load in case of failure of the tail strut.

heavy condition, the usual difficulty of the pilot having to stall down the stabilizer in order to get the tail down is not encountered. All that is done is merely to momentarily compress the elevator hinge adjustment.

The fin and rudder are both metal covered throughout, and it is in the rubber that there is found one of the most interesting developments of the Leaning Amphibian, as the area and shape of rubber and balance have been extensively tested in flight in order to obtain the most and desirable

aping characteristics that are now found in this type of plane. It will be noted that the rudder is quite high with a fine air-piercing intro and of large area. The outline is of composite construction, making the same as the hull, which is a totally new departure in the construction of control surfaces for airplanes, emphasized by Loening, and found very successful. The frame of the rudder is wood, externally covered and braced to which is extensive dural sheeting of very light gauge with all the usual precautions of anti-corrosion paint, and false strips.

The Pratt and Whitney V-type engine, mounted at the nose is supported in a manner quite different from the usual installation in biplane airplanes, in that, in addition to the steel tubes running fore and aft to the longrons from the second dural engine plate, there are two vertical struts running down from the engine plate and somewhat forward, braced by cross wires which transmit the engine load directly to the front part of the hull. This engine had support has been accomplished by greatly reducing the usual radial engine vibration, and making the plane smoother in fly. The cooling around the engine has been reduced to the minimum as so to give ample air cooling for tropical work while at the front section of the cowling is the usual rotary shutter widely used on foreign air-cooled engine planes. The removal of the body beneath the engine is well demonstrated, as may be seen from the photograph and the construction of the radial engine in the body section has been based on the OL-8 to be less than that of the old water-cooled engine and its radiator.

The end tank is located right back of the engine and has



The wheel of the Loening Amphibian extended. There is no load on the landing gear when in flight.

a capacity of 20 gal., and the gasoline tank, which has a capacity of 140 gal. is located in the lower part of a hull below the pilot.

Usually the most surprising feature to pilots as they see OL-8 Amphibian is the remarkably easy and smooth flying characteristics. According to the report of Navy pilots, the OL-8 is a confident flying machine, control is easy and positive, stability is entirely satisfactory. The plane is well balanced and has been declared by numerous service pilots as representing one of the finest flying airplanes of any type to be seen today. It is said that by turning the rudder close, the plane of its own accord goes successfully into the power bank in which the rudder is held on the opposite side and with an effort being the tail on the opposite side, the plane assuming the correct opposite bank with no twisting whatever to be directionally steady. The reference to not to move and positive in their action is a degree that is surprising even at the slowest stalling speeds.

Plane Taken Off Quickly

The plane tends to come up powerfully when dural and sets very well to a wing stall. In the shortest still the plane has been found to be so controllable that it can be prevented from falling off an either wing. A large side tank enables pilots to make the most extraordinary side slip landings, as the plane has the desirable characteristic of flying entirely positive in the air in all positions that it is in. Government work, of course, the Loening Amphibian has been found, open and closed, frequently, particularly in the last pilot of McCook Field who put the plane through every conceivable maneuver.

Another feature of great practical importance in the V-type engine Loening amphibian is the quick take-off on the water with full load. The plane has been repeatedly tested to take off between nine and ten seconds. Due to the special open wings that have been added to the hull, very little spray is thrown into the propeller and positively none at all into the engine.

The Loening Amphibian carries a large load and a 200 lb. plane of this type that can be thrown around and shown in response in the manner in which the OL-8 responds to its controls is a remarkable achievement in airplane engineering.

Seen the maiden flight of the first Loening Amphibian, at June 1924, piloted by Leroy Randall Bruckley of the Army Air Service, it is interesting to learn that over 1,000,000 sq. ft. of flying have been done by Loening Amphibians so positively every part of the world.

A Design of Many Uses

This original and modern design of plane, having become in a space of three years the standard service plane of this type for the Army Air Corps, the Naval Air Service, the Marine Corps and the United States Coast Guard, is now a familiar sight at all our stations and represents a remarkable way the successful achievement of a unique American step in the aviation art, which is not even approached by developments in other countries.

Although the Loening Amphibian has been primarily designed for observation work for both Army and Navy, it has found many other purposes—one of the most successful of which has been its use in aerial photography. Moving the fuselage and the hull into a single compact structure has demonstrated the bending frame of the wings and the engine superstructure of the flying boat, and has given a highly useful land plane which it never to see the water, and a truly tender boat which it never to see land—but because the two are combined in this plane with its large body at-

ways. Taking ample room for men and some equipment, it is not so understood why the U. S. Government has not seen the Loening Amphibian for its different uses.

The list of these successfully achieved special operations of the U. S. Government is decidedly impressive, and began in 1925 at the use of the Loening Amphibian by Commander J. D. Boyd with the MacMillan Arctic Expedition, who came from New York to Greenland after 4,000 sq. mi. of the most dangerous land of flying over the Arctic wastes.

In December 1926, Lieut. Eugene Dutton, Army Air Corps, accomplished his aerial survey of the Bay of Lakes and the Canadian border with complete success—a feat the Army could not previously accomplish because it took an amphibian and a good crew to do it.

In March, 1928, Lieut. Clarence H. Schellenger returned from Cuba, his hydrographic survey for the Navy successfully completed without any difficulty using the very same plane that Boyd flew in the Arctic.

Sets World's Record for Speed With Load

In August, 1926, Lieut. George C. McNeill set the world's record for speed with load in an Army Loening amphibian, not only as a complete but carrying all its landing gear along in addition.

In the late summer of 1926, Lieutenant Pope of the Navy accompanied by Chief Machinist Matt Jaso, successfully accomplished their work for the Navy in the Gulf of Venezuela under the worst tropical conditions.

During the summer of 1926, Lieut. Theo H. Wylie of the Navy went up to Alaska with his first of Loening Amphibians—five about 10,000 sq. mi. without a single forced landing of any kind, and flew back down the Pacific Coast to San Diego, completing one of the most brilliant exploits in the annals of American aviation, and with more than double the amount of difficult survey work accomplished than had been thought possible. Lieutenant Wylie recently was awarded the Distinguished Flying Medal by President Coolidge for his notable achievement in the expedition.

The latest and greatest achievement of the world-wide use of the Loening Amphibian is the Pan-American flight, under the command of Maj. Herbert Dargatzis. As has been pointed out in Major Dargatzis's reports and articles, this plane distinguished itself by overcoming difficulties that no other type of plane could have done. A test of equipment gave confidence, proved the smoothness and serviceability of the Loening Amphibian.

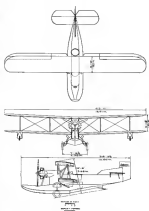
Standard Equipment in Army Air Corps

Following the Pan-American flight, Major Dargatzis used one of these same planes on a good will tour of 30 states. Another of the planes of the South American expedition has been in the air over 50 air miles since its arrival at Belém, Brazil, in May 1927. The first of these planes to carry the Lieut. C. Langbehn from Michel Field to New York harbor in his return to the United States.

At the present time, this type of plane is in daily service on an every half-hour in the United States fleet, at Naval Air Stations, in San Diego, Panama, Manzanillo, Mexico, America, etc.

In the Army Air Corps, the Loening Amphibian is standard equipment, and actually is used in Panama, Philippines, and Hawaii, where it has been found ideal for observation work. It is used in Loening Amphibians are stationed at York Point, Belém, Pinar, Cayman, Wright Field, Kelly Field, Ft. Crockett and Langley Field.

The Loening Amphibian is also in the service of the United States Coast Guard with planes stationed at Gloucester, Mass., and Cape May, New Jersey, where they are used by the



Three view showing of the Loening OL-8 Amphibian.

Coast Guard for cooperation with service vessels in coast patrol against smuggling.

In addition to the above, the United States Marine Corps have several Loening Amphibians in active service,—there being a unit of these planes actually in use in the Marine Corps Amphibian at Shanghai, China, where the United States is represented in an area of international operations.

The 1926 Loening Amphibian will shortly be delivered, and the Loening Aeronautical Engineering Corp. has been actively engaged in its specification as this work a vast amount of practical experience with the use of its technical advantage in this company when it proceeds into the commercial field—which it has been confidentially whispered will shortly be the case.

The Loening Amphibian is a patented and proprietary design, and the history of the development work of Greiner Loening's creation of this new type of plane occupies an unusually distinctive place in the history of the art.

The present manner in which the construction of this plane have been by their development and brought it to the high degree of success that it has now attained is an inspiring example of the engineering work of patient and logical step-by-step growth of an idea, from the original thought on paper to the finished product itself,—now being produced at the Loening plant at the rate of two a week.

The importance of the Loening work on amphibians is only now beginning to be realized, particularly in view of the



Abolition of Visas Recommended

Delegates representing 22 air service companies at the International Air Traffic Association, at a conference held in Basel, Switzerland, recently, issued a resolution recommending governments to abolish visas for pilots and other flying personnel whose control had been ascertained in advance.

The delegates also decided that radio stations under government control and available for use in managing air traffic should be placed under the same supervision as for the air services in the countries concerned. A plan resembling like the proposals of the International Chamber of Commerce on the uniform regulations for handling air mail was approved.

After much discussion regarding the publication of traffic and other operating statistics of air transportation companies, the majority of the delegates submitted to the organs that governments should not publish detailed reports for each company but brief, general information for the industry as a whole, and a resolution instructing the secretary general to communicate this result to the governments concerned was passed. A recent decrease of the Committee Internationale de la Navigation Aeronautique which requires that after Jan. 1, 1938, each airplane carrying more than ten passengers must have on board a navigation officer was disapproved by the conference and the air transportation companies were requested to propose a temporary postponement of the new regulation.

The association was organized in 1920 and maintains its principal office at The Hague, Netherlands. The 22 member companies are in fifteen European countries and the organization's object is to organize air service in a uniform basis in all countries.

Budapest to Paris or Constantinople

Progress in aviation in Hungary during 1936 was confined chiefly to the further development of the existing air services between Budapest, Vienna and Belgrade. As a result it is now impossible to reach Paris or Constantinople from Budapest in one day.

A considerable step was also taken by the creation of a close alliance between the Hungarian Air Transportation Co., and the Deutsche Luftverkehr Co., for the joint ownership of a new line from Budapest to Vienna. Budapest was thereby linked to the base of the Deutsche Luftverkehr, 10,576 mi. in length, and came into direct connection with Berlin, London, Amsterdam, Stockholm, and Moscow.

In addition to carrying on these well established lines, preliminary steps were taken toward the establishment of a regular service between Budapest and Graz, Austria. The importance of this line is suggested by the fact that it has a direct connection with Vienna via Klagenfurt. By that route the journey from Budapest to Vienna can be made in six hours.

The journey from Budapest to Vienna, is completed in 2 hr., 45 min., 45 min., from Budapest to Belgrade in 2 hr., 30 min., and from Budapest to Graz in 2 hr., 20 min. The average speed of the airplanes is 60 m.p.h. The total number of airplanes in service in 1936 totaled 16 and the number of pilots eight. The service was operated on the Budapest-Vienna line from Feb. 13 to Dec. 31, during which time on week days three flights

were made and on the days one flight. On the Budapest-Belgrade line the service was operated from Feb. 15 to Nov. 15. One flight daily was made on this line on week days only.

No accident occurred during the entire year, and only a 33 cases were forced landings necessary. The reason for forced landings in 95.5 per cent of the cases was the bad weather and in 18.5 per cent, engine defects.

The regularity of the service is continuously improving and is only surpassed that a flight from the Vienna-Belgrade line. During 1936 only 41 flights of the total were cancelled (31 per cent.) due to 95.1 per cent of the cases to bad weather and in 4.9 per cent to engine defects. The number of flights increased by 255 to 1,954 in 1936.

During the year 3,718 persons were transported, an increase of 365, or 10.6 per cent, over 1935. Of the total, 30.9 per cent were Hungarians, 20.9 per cent Germans, 16.7 per cent Americans, 4.9 per cent French, 4.6 per cent British, 2.7 per cent Yugoslavians, 2.7 per cent Czechoslovaks, 1.7 per cent Russians and 4.2 per cent of other nationalities. 79.9 per cent of the passengers paid regular fares, 4.5 per cent reduced fares and 15.6 per cent traveled gratis.

French Manufacturers Found Schools

French airplane manufacturers have established aviation schools giving in most cases a first and second degree diploma upon completion of the courses. All candidates for the first degree must have had at least 15 hr. of flying, either at least six weeks of instruction. Candidates for the second degree must have had at least 25 hr. of solo flying during a minimum of three months of preparation. In addition, the applicant must pass a test on theory, and national and international air regulations. The candidates for the first degree in total for 12 months and that for the second degree, six months. Both can be renewed for a similar period providing the applicant has had at least three lessons of flying during the preceding semester.

Stockholm-Helsingfors-Royal Air Mail

Mail is carried by airplane directly from Stockholm to Helsingfors and Backa, as well as to Berlin, Leipzig, Dusseldorf and Moscow, and from Moscow to London, Amsterdam, Brussels, Paris, Prague, Vienna, and Bucharest. The air mail postage is air mail to European countries in 30 cents per 30 grammes, 704 ounces. Mail for the United States may be forwarded by plane from the point of arrival into the United States at an extra charge of 90 to 100 per 704 ounces.

Propose French Subsidies

Compagnie Air Union Lignes d'Orient and the Compagnie Air France-Algeria have taken up with the French Government the question of subsidies for proposed aviation routes from France to Syria, via Greece, and from the latter to Algiers.

German Flight Bureau Established

A federal bureau for flight statistics has been established in Germany. The local airport wireless stations, with a view to safeguarding service all over the Reich, have been placed under the direction of an official body called the Central Bureau of Flight Statistics, which is now in subordination to the Ministry of Transportation.

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An Open Letter to the Personnel of the Aircraft Industry

November 1, 1937

Gentlemen:

To those who look back a year with us in the first efforts of the "Air Age Association"—to the few who encouraged our aims and welcomed our incorporation—to the many who responded to our letters about "a visualized service bureau"—this page carries both thanks and a promise: We have created a valuable task. If we succeed, our success will be yours.

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Chicago, Ill.

By James L. Lohr

Chicago's airport plans and activities are as extensive as any in the world. The municipal field supplemented by its army of fields provides ample accommodations for Chicago's present air transport service.

Chicago has outlined a definite policy in the design and construction of its airports, the ultimate objective being a large, central, supply base maintenance field from which airplanes are to be kept in the nearby operating fields, to be loaded and to which they return after depositing their loads. The feature of this field is similar in nature to the functions of a car lot or railroad roundhouse.

The operating fields will be close to the heart of the city and will be laid out in the form of points in horizontal, with the surrounding land and Chicago's wonderful boulevard system. Repairs and maintenance work at these fields will be performed in a warehouse, all work of this nature being done at the large maintenance field. Travelers coming to Chicago in an air will land in a park. The discharging of service airplanes to be brought under a hangar, or of machines ready to start an engine will be performed.

The large maintenance field has been in existence for several months. Several large hangars are already located there, the

National Air Transport and Boeing Air Transport hangars being perhaps the most significant. This field is called the Municipal Airport and is located at 63rd Street and Cicero Ave., about two miles southwest of the Loop, Chicago's business district.

This field has an area of 320 acres with three and a half miles of runways including in various directions. Each of the four corners of the field will have a 500 million c.p. D.T. floodlight. The direction of the wind will determine which of the four lights is to be used. The whole property belongs to the Chicago School Board, whose law would for aviation a very moderate charge of \$200 a year for hangar space. Final preparations are being made so that the field will be ready for operation within a month.

The Municipal Airport, however, does not interest Chicagoans so much as the proposed artificial "island" field to be located on the lake front, about five miles by automobile from the loop. This field will be situated near the famous Soldiers Field. The preliminary survey work on the "island" field has been completed and only legislative permission is necessary to continue. This permission is soon to be granted.

The plans call for an airport one square mile in area located on the lake between 12th and 16th Streets. It is to be harnessed in conjunction with the plans of the Chicago

FLYING or Acrobatics on Shaky Plank?



When you use a rubber band, you lead your passengers from the line. When you use a motor complete, you usually lead them from the line. Just back your airplane up to the beach and your passengers can disembark from the line, while you can get on with the other one. This new line with Life line best condition and proved to be quite practical.

The sharp stem of a flat hull is not new tradition may look odd, but it has long been used at the beach, and there is no way to get the machine from the beach except by walking on a plank. It takes time and a crew to get the machine to passengers at shore.

The sharp stem is a new machine is built on considerably. Being narrow, it is the lightest and usually has rounded hulls which approximate the diameter of a passenger airplane. It has the provision of getting on can be described as an machine that it was all right for good water in wet land, but it is not practical for passengers in point one. Passengers want to fly, but they do not want to practice acrobatics.

The Life line is built for converted service. They do not follow the new line. Their darts have full width up to the point which are properly left alone. The wide stem of Life line have very little draft. When the airplane is pulled up to the beach, there is but a few inches for passengers take the flat and wide deck of Life line. The passenger need no concern in getting on and off and your boat will be ready to be kept. Think of the comfort of passengers and you will have no worry, but your business.

EDO AIRCRAFT CORPORATION
 College Point — L. I., N. Y.



airplane this in New Orleans. The city located one of the largest and finest clubs of its kind in America but it was disbanded several months ago due to the fact that the members had outgrown the age of experimenting with models. Several of the members have "painted up" purchased a design and are learning to fly. The club, it was learned, will be sponsored by *The Junior Item Tribune*, the hotel and golf department of *The New Orleans Item* and *The Morning Tribune*.

Atlanta, Ga.

By John K. Gales, Jr.

Candler Field will have its first enclosed cabin plane, a Ryan monoplane, early this fall; it has been leased through the purchase, C. F. Whitcomb, of Atlanta.

Although the plane will be owned by Mr. Whitcomb it will be operated for tax lessons at Candler Field by Reber Blowers, local pilot.

Atlanta had an aviation show in connection with the annual radio and electrical exposition staged Oct. 17-22, at the city stadium.

Retires were made by the Alexander Aeronaut Corporation, of Denver, and the Advance Aeronaut Corporation, of Troy, Ohio, in addition to local retires.

One of the local events was an Atlanta-Richmond plane which was dismantled and assembled daily by students of the Great Southern Flying School.

W. T. Mahon, of the Atlanta chapter of N. A. A., was serving director of the aviation show.

Robbinsdale, Minn.

By R. A. Lindbergh

There are a number of problems that arise as aviation continues to develop and one that the owners of planes will have to contend with, is that of storage.

"Doc" Ellis, a pilot at the Robbinsdale Field, made a contract with a private detective agency to protect his machine from theft.

There has been worried by a sign on the plane as they are protected by a detective agency and "they shall be prosecuted to the full extent of the law".

Two planes have been stolen from the field during the year, while one has disappeared from the Wild-Clanfield Field in Minneapolis, so possessions were taken to prove there being a W. O. L., especially as it is a difficult problem to secure delivery of planes when wanted.

Omaha, Neb.

Omaha has experimented with various landing fields, but at present the city has acquired through purchase, it is a purchase of approximately \$10,000, a 200 acre tract of land that will be a desirable airport when present plans are made.

When arriving at the field by plane, the plane is laid in readily be located as it is situated between Carter Lake and the Missouri River, with several of the larger buildings located something to regulations so as to be plainly visible from above.

If the field is to be reached by car, then the direction is followed from the down-town section are plainly visible as the light and telephone poles and lead out on a fine level road close to the destination in about 10 minutes driving, it is certain will bring a person within five blocks of the field.

As it is desired to make the proposed airport one of the clubs can be given, the American Legion and the local branch of the N. A. A. conducted a drive during which \$100 was raised. This sum will be used in constructing a hangar that will serve as a nucleus for others.

The local branch of the N. A. A. of which Earl Kitchener

October 24, 1927

president and Lewis Theodore secretary, is an active organization and is taking an important part in the growth of Omaha as a progressive aviation city.

W. A. Olin, who is at the head of the Aeronautics Transportation Committee of the Chamber of Commerce, is keeping in constant touch with the most up-to-date methods pertaining to aviation, as any proposed development of which he will have no control will be secured of that which has been approved of by the leaders.

The Boeing Air Transport Line, which has been operating the Chicago-Des Moines Mail Service since the first of July, is based at the Fort Omaha Field, which is about a half hour ride from town.

It is carrying a good passenger carrying business and it is often necessary to run additional planes to accommodate of those desiring to travel by air.

The American Railway Express reports an increase in the use of the new branch of its service.

C. S. Wicks newly arrived from the factory in Denver with a complete wing airplane, for which he has the spirit.

He was located at Dodge City, Kan., up to June 8 of this year, but his equipment has been moved to the new municipal field where he is continuing his activities.

There are 35 students receiving flying instruction on the lapangan and this lot will continue to grow according to present conditions.

John (Jack) F. Kirk is taking the Waco, of which there are two in the field, as well as giving flying instruction to the several students that he has secured.

Maynard, Minn.

Anyone who has tried to get early delivery on a new production light commercial plane knows that it is a difficult proposition, as G. O. Iron of the Northern Airport, who has the Ryan agency for Minnesota, is trying his best to please those who desire to own the new type.

Some of the planes ordered will be received during the winter months, so the purchasers will have them for early spring use.

The Maynard weather has hindered operations somewhat, but the industry is trusting have been receiving their instruction as usual.

James Keith is bartending throughout the state as well as demonstrating the Ten, while a recently purchased Ryan wing used for student instruction at Maynard.

An air rally was held at Grove City during the middle of October and both planes were on hand to serve the interested people.

A monoplane, that was recently built there, was demonstrated during the two day program.

St. Joseph, Mo.

The St. Joseph Mid-America Airport, so named as it is located in the geographical center of the country, has a higher standard than places it among the leading fields of America. When completion of equipment and other points of safety are considered.

When traveling by air to this airport, there are several ways of reaching it from above.

One of the gas holders of the St. Joseph Gas Co. is located at St. Joseph's is between twelve feet high by three feet wide. The other ventilation provided by the Department of Commerce is on a black background, with a red arrow pointing through the cone and pilot light is the location of the airport.

It is marked with a 100 ft. landing circle with a four foot line, which is located a cross having arms that extend



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twenty-five feet from the center in east-west and north-south directions.

The name "St. Joseph" is embossed both with the field in large letters of enamel, near one corner of the airport and together with the Missouri River as the southern boundary, this field can readily be located from the air.

On landing, which can be done safely in any kind of weather on this 180 acre field, the plane can be serviced with gasoline, water or oil and if any repairing is necessary, these limited mechanics are available with completely equipped shops in which to do the work.

A safe landing can be made after dark as this airport is equipped with boundary and flood lights. An emergency switch that turns on all lights is located outside the large hangar, while the control board for the individual lights at the field is located within. The meeting between an Wirth Park hill, which has been used for about one hundred forty miles is a good guide for night fliers. The city has expended approximately \$148,500 on this airport, and predicts that on the fact that all is paid for, including the equipment.

The National Air Transport, Inc. is using the west side of the steel hangar (80 x 120 ft.), in which they are at present overhauling the Liberty engine-driven Curtiss Pigeon used on the contract air mail route between Chicago and Dallas. Additional Transit Air motorcycles are in service while the Pigeons are being remodeled.

The east side of the hangar is rented to commercial planes at a nominal cost, as St. Joseph is interested in encouraging aviation activities as much as possible.

Student instruction at the field is given on a Standard training plane owned by Orville Brown, with Joseph Lawrence and Page McPherson as instructors. As the center of town is only three miles distant, it can be quickly and conveniently reached by way of a paved road leading from the field.

St. Joseph is also the location of the Bird Wing Commercial Aircraft Co., which will begin production on a 2-1/2 ton bi-control biplane with an OX-5 engine.

The Bird Wing Commercial Aircraft Co. plans to build a flying school that will instruct the student in all day, constructive and actual of a plane as well as in training in the fundamentals of aviation so when he has a level, have acquired knowledge that will enable him to use his own decrease the length of aviation that most applicants in St. Joseph, Mo.

By Charles Hansen Lark
Massachusetts Airways of Springfield has announced a extension of its service. It will offer complete aerial sight-seeing service and has also announced that the type of equipment will be shifted over to the new Hercules "Super" Westfield. The company will move over there as soon as a hangar, being leased by the combined Holyoke of the local chamber of commerce, has been completed.

The company will manage the field in return for the service, while the plane carrying and for the several business. The field is used to be in the shape of a number of hangars and hangars. The field is used by many pilots in the past and has been the most covered air fields of large proportions. It has ample drainage, water, light and railroad siding facilities. The plane service is also available.

The company has also announced that it will operate a Lehigh, a small mail plane out of Springfield, every five days. Springfield will still be the headquarters of the company, it was stated, but the planes will be based and operated at Westfield.

Lark Albert Glabe has announced his plans for a good school course for the winter which would also include a flying school in the spring. Lieutenant Glabe flew over his own last during the war as a spotter and photographer for artillery. He received his pilot rating from the First school at Tuscon. A ground school course has been started.

By Lark Albert Glabe. He has assembled wings and parts on an OX-5 for instruction purposes.

A St. Joseph conference on flying clubs has met with the approval of the American of the Flying Club of Springfield, Mo., Inc., and arrangements for the meeting are being planned for some time in November. The conference will be to organize the flying club interests in this corner of the country into something of the nature of a New England Association of Flying Clubs for the benefit to be derived from a coordinating agency.

The Springfield Club feels that such an organization is particularly appropriate at the present stage of flying club development on account of the lack of precedent and information for the act of new clubs. This conference will present a preliminary attempt to face the problems of organization, finance, of equipment and should set up machinery to work in the general promotion of flying club activities in New England.

"The date of the conference has not been determined but it will probably be held the day after the New England flying convention here, on Nov. 17 and 18. The conference should be a single day or possibly a weekend affair and would be held on Saturday, Nov. 18, if it was decided to coincide it with the other mentioned convention."

A large number of those people at the Springfield club who are interested in the project have been notified or invited to the conference at close to all interested in flying clubs, both of New England and outside and those wishing to attend are already invited to communicate with the secretary of the Springfield Republican office.

The Institute program includes papers by those who have had flying club experience and aviation experience with experience played on questions periods. Several reports to the assembled field will probably be turned to discuss particular problems such as insurance, financing, operation, etc. Pilot Fred J. Bosta of the Massachusetts Airways Company has been first place in a commercial airplane race at the recent convention held at the Cleveland, St. H. H. Airport. Bosta flew an Eaglehawk and it was said he won the 25 mile around two mountains by a large margin.

Cincinnati, Ohio

By E. E. Allen May

Jack Watson, operator of Watson Airport and distributor to Travel Air planes, sold two OX-5s this morning. The buyers were Shuckert and Bennett, of Ft. Wayne, Ind., and William R. Leedy, of Tarrytown, Ohio. As Leedy purchased Watson's distributorship there was nothing left for him to do but to leave the OX-5 plane from the factory. This is expected to arrive in a week or two.

George Quillen, instructor at Watson Airport, is being kept busy these days giving instruction flights to the largest number of students ever on the motor.

Jack Watson's new "Wichita" Travel Air was flown in from the west by Howard Kierker. This plane was ordered in New York to Spokane air race, but because of heavy clouds and weather it could not reach New York in time for the start.

A clever innovation, perfected by Jack Watson, was tried this morning. It consisted of a three foot wide, 10 ft. long piece of aluminum on a stand in the center of the crowd of spectators and connected with the main office by wires. The communications could be made to the large crowd for news, early and early then by the megaphone system and by hand.

A great deal of night flying has been done at the Watson Airport since the installation of flood lights and boundary lights during the summer. Besides these lights there is a large 5-1/2 foot beam light mounted on a 50 foot pole which is



As Esline constructed, there is still spare hangar at Oakland Field, Milwaukee. A section that is being built alongside the main building.

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Kansas City, Kansas

An announcement made by Manager George Lusk, Two of the planes, one powered with an OX-5 engine and the other with a 240 hp Hispano engine are to be delivered during November. The remainder will be delivered a week later during the next 12 months. This Southern Airline for a period of time will operate between Dallas, Houston, San Antonio and other Texas cities.

The factory also announced shipment of three OX-5 engine biplanes to the Springfield Air Base, Springfield, Mo., this week. A biplane biplane, along a 1-1/2 hp Hispano engine, will be delivered soon to the same airport, near, Missouri, Ind.

Architect plans for the Cessna-Ross Aircraft Company's new factory have been accepted by company officials and construction will be started at once. The factory will be built on a 27 acre tract about three blocks from the company's present, temporary location. The new house, now being graded for use as an air field. Clyde V. Cross, director of the Cessna company, is president of the company.

C. E. Ross of Detroit will arrive soon to act as superintendent of the building department. F. W. McCann, formerly of Chicago, will be chief engineer and Ross will be in charge of sales and production work, while Mr. Cessna will be factory superintendent.

F. C. Gault, who a few months ago took his first airplane ride as a student of L. S. (Pete) Lewis of the Wichita Flying school, this week established his supremacy in the air by perfect performance. Lewis was at the controls. A speed of 80 mph. was made and it is said that with minor adjustments it will make 110 to 120 mph.

The Wichita Flying school announces the purchase of a Travel Air biplane equipped with an OX-5 engine, to supplement the two biplanes. The new plane, in use at the school, the plane, equipped to enable facilities for night flying, will be delivered Nov. 6. The engine expert to have another Travel Air biplane of similar design in service by the first of the year.

Hartford, Conn.

By E. A. Poller

The extent of local interest in aviation, may be determined by the entire attendance of a class in aviation recently started in the class room of one of the high schools. This class, under the auspices of the American Legion, is being conducted by Serg. Carl, of the Connecticut National Air Squadron, and is open to the public, for a nominal charge to participants. It is hoped to get a class of about thirty students, and, judging by the present enrollment, the maximum will soon be reached.

Leah, "Mere", a 26-Chief, also engineer for the Travel Air Aircraft Co. from the company's new plane, a standard model Boeing wing plane, from Salt Lake City to this airport. Lieutenant MacCallister accepted delivery at Salt Lake City and made the trip to Hartford accompanied by the assistance of C. W. Davis, treasurer of the class. The plane, powered with a Pratt & Whitney Wasp, is well suited for experimental purposes and will be loaned to its owner now being built by the company on Broadway Field.

After numerous meetings Hartford's entry in the Sperry New York race, arrived at Broadway Field. The plane, a Brewster biplane, powered with an OX-5 engine, dropped out of the race at West Point, Wis. Considerable time was lost getting parts, and Capt. Earl W. West, and Brewster H. Thomas finally concluded that a new engine was needed. They were persuaded by the "jazz" however, when the engine trouble landing in Chicago in a heavy wind, and the wind, rain, and at one time even in the very heart of the

hourly. It is planned to give them an orthonomic view of the Hotel Hawk, where they will be expected to the visiting delegates with a story of their journey.

Let: H. W. Gleason of the National Guard Air Squadron, in been appointed Deputy Commissioner of Aviation, at Commissioner Knox's office at Broadway Field.

Let: H. W. Gleason is a graduate of Kelly Field and is credited for the work. He will assist in the supervision of an activity in the state and should prove a valuable asset to the Commissioner's office.

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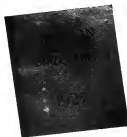
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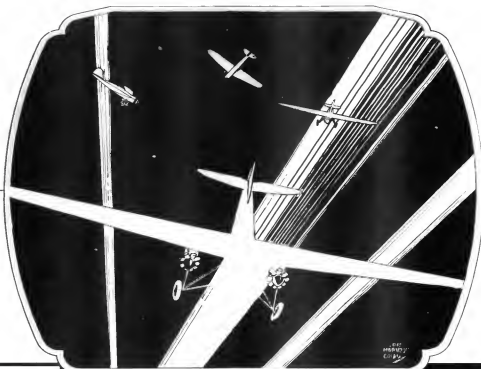
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